

Amendments To The Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A rapid-action coupling cylinder comprising:

a guiding device ~~for the controlled~~ which controls insertion of a pull-in nipple (2) fixed to the underside of a workpiece pallet (19) into ~~the~~ a central receiving aperture in ~~the~~ a housing (11) of the rapid-action coupling cylinder (1),

~~characterized in that the~~ wherein a front face on a free end of the pull-in nipple (2) has, in the direction of insertion, and a conical bevels bevel (17) that are is beveled toward the rear, which cooperate cooperates with an associated [-] and oppositely beveled conical receptacle (18) in the housing (11) of the rapid action coupling cylinder (1).;

wherein an inner beveled circumference of the receiving aperture (4) on a cover of the housing (11) has an inlet radius (102) that engages the conical bevel (17) and guides the pull-in nipple (2) into the conical receptacle (18), and

wherein the conical receptacle (18) is formed by a upper ball bearing cup (8) and a lower spring support (9).

Claims 2-3 (Canceled)

4. (Currently Amended) A rapid-action coupling cylinder comprising:

a guiding device ~~for the controlled~~ which controls insertion of a pull-in nipple (2) fixed to the underside of a workpiece pallet (19) into ~~the~~ a central receiving aperture in ~~the~~ a housing (11) of the rapid-action coupling cylinder (1), ~~characterized in that the face~~ wherein a free end of the pull-in nipple (2) ~~incorporates~~ has a recessed conical receptacle (33) that ~~cooperates with~~ engages an associated [-] and oppositely beveled conical tip (34) in the housing (11) ~~of the rapid-action coupling cylinder (1).~~

5. (Currently Amended) A rapid-action coupling cylinder according to ~~any of claims 1 through 4~~ claim 1, ~~characterized in that~~ wherein the conical members ~~(17, 34)~~ receptacle (18) disposed in the housing (11) ~~are arranged~~ is fixed to the housing.

6. (Currently Amended) A rapid-action coupling cylinder according to ~~any of claims 1 through 5~~ claim 4, ~~characterized in that~~ wherein the conical members ~~(17, 22, 34)~~ oppositely beveled tip (34) disposed in the housing ~~are~~ is

fixed on a lifting piston ~~(21, 31, 61, 71)~~ that is arranged raisable and lowerable in the housing.

7. (Currently Amended) A rapid-action coupling cylinder according to ~~any of claims 1 through 6~~ claim 6, ~~characterized in that, in the~~ a region where the pull-in nipple (2) and the lifting piston ~~(21, 31, 61, 71)~~ make contact, the corresponding contacting and associated surfaces are kept free from contaminations.

8. (Currently Amended) A rapid-action coupling cylinder according to claim 7, ~~characterized in that~~ wherein the lifting piston ~~(21, 31, 61, 71)~~ has provided in it blowing-air openings or cooling agent openings that are directed towards ~~the~~ associated surfaces of the pull-in nipple (2).

9. (Currently Amended) A rapid-action coupling cylinder according to ~~any of claims 1 through 8~~ claim 6, ~~characterized in that~~ wherein the lifting piston (21) is ~~implemented also~~ composed of several parts and that ~~the~~ an upper part thereof consists of an ~~easily~~ exchangeable wear insert (28).

10. (Currently Amended) A rapid-action coupling cylinder according to ~~any of claims 1 through 9~~ claim 6,

~~characterized in that~~ wherein disposed in the lifting piston ~~(21, 31)~~ is a turbine wheel (36) that is driven in rotation.

11. (Currently Amended) A rapid-action coupling cylinder according to ~~any of claims 1 through 10~~ claim 6, ~~characterized in that wherein in the~~ a region of the conical tip ~~(34)~~ of the lifting piston ~~(31)~~, an annular projection (35) with nose-shaped cross section is provided that chops shavings that enter into the intermediate space between the pull-in nipple (2) and lifting piston (31).

12. (Currently Amended) A rapid-action coupling cylinder according to any of claims 1 through 11, ~~characterized in that wherein~~ an air-carrying space is formed ~~on the~~ an underside of the workpiece pallet (19).

13. (Currently Amended) A rapid-action coupling cylinder according to ~~any of claims 1 through 12~~ claim 1 or 4, ~~characterized in that wherein~~ a sealing-air monitoring is provided for monitoring ~~the~~ a flat and level seat of the workpiece pallet (19) ~~on the~~ a top surface of the cover (6).

14. (Currently Amended) A rapid-action coupling cylinder comprising a guiding device ~~for the controlled~~ which controls insertion of a pull-in nipple (2) fixed to ~~the~~ an underside of a workpiece pallet (19) into ~~the~~ a central

receiving aperture in ~~the~~ a housing (11) of the rapid-action coupling cylinder (1), ~~characterized in that wherein~~ between the pull-in nipple (2) and a lifting piston (21, 31, 61, 71) disposed in ~~the~~ an interior of ~~the~~ a rapid-action coupling cylinder, a capturing device (50, 53, 54, 56) is arranged ~~for the mechanical connection which mechanically connects~~ of the pull-in nipple to the lifting piston.

15. (Currently Amended) A rapid-action coupling cylinder according to claim 14, ~~characterized in that wherein~~ the capturing device consists of a capture screw (50) having a stepped shape with multiple steps, which extends through the pull-in nipple (32) and is engageable to a capturing element (56) fixed on the lifting piston.

16. (Currently Amended) A rapid-action coupling cylinder according to ~~one or more of claims 1 through 15~~ claim 6, ~~characterized in that wherein~~ between the pull-in nipple (2) and ~~a~~ the lifting piston (21, 31, 61, 71) disposed in the interior of the rapid-action coupling cylinder, a capturing device (50, 53, 54, 56) is arranged ~~for the mechanical connection which mechanically connects~~ of the pull-in nipple to the lifting piston.

17. (Currently Amended) A rapid-action coupling cylinder according to ~~one or more of claims 1 through 16~~ claim 1 or 4, ~~characterized in that in the case of~~ wherein multiple pull-in nipples that are arranged parallel with each other on the underside of a workpiece pallet, wherein a capturing device is assigned to each pull-in nipple in a separate rapid-action coupling cylinder, all capturing devices are driven synchronously.

18. (Currently Amended) A rapid-action coupling cylinder according to claim 17, ~~characterized in that~~ wherein the lifting pistons (71) that are connected to the capturing device in each case are mechanically connected to each other by means of a toggle-lever rod assembly (70, 72, 81, 82).

19. (Currently Amended) A rapid-action coupling cylinder comprising a locking action, effected by spring-biased balls, of a round member that has at least one locking groove and moves in a center recess of the housing in the rapid-action coupling cylinder, and whose locking action is released by displacement of the balls by means of a fluid-actuated piston, ~~characterized in that~~ wherein the round member is implemented as a machine shaft (91) that extends through the housing (11) of the rapid-action coupling cylinder (1).

20. (Currently Amended) A rapid-action coupling cylinder according to claim 19, ~~characterized in that~~ wherein the machine shaft (91) has one or a plurality of locking grooves (92, 93, 94) arranged at an axial distance from each other, parallel with each other, which are selectively engageable with ~~the~~ a locking means of the rapid-action coupling cylinder (1).

21. (Currently Amended) A rapid-action coupling cylinder according to ~~one or more of claims 1 through 20~~ claim 1 or 4, ~~characterized in that~~ wherein two oppositely acting rapid-action coupling cylinders (1, 1') engage in locking grooves (92, 93, 94) and create an opposite pull-in force in each case.

22. (Currently Amended) A rapid-action coupling cylinder according to ~~one or more of claims 1 through 21~~ claim 20, ~~characterized in that~~ wherein the machine shaft (91) is supported rotatably in the locking means of the rapid-action coupling cylinder.

23. (New) A rapid-action coupling cylinder according to claim 4, wherein the recessed conical receptacle (33) disposed in the housing (11) is fixed to the housing.